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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,520	09/24/2001	Hiroshi Nomura	P21185	5319

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EXAMINER

THOMPSON, TIMOTHY J

ART UNIT PAPER NUMBER

2873

DATE MAILED: 02/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,520

Applicant(s)

NOMURA ET AL.

Examiner

Timothy J Thompson

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Iwasaki(U.S. Patent No. 6,195,211).

Regarding claim 1, Iwasaki discloses a front sub-lens group(fig 10, 122) provided on the object side and a rear sub-lens group(fig 10, 126) provided on the image side, said front and rear sub-lens groups functioning optically when in a mutually close position(fig 6) and in a mutually distant position(fig 2) with respect to the optical axes of said front and rear sub-lens groups; a front sub-lens group frame(fig 2, 13) for supporting said front sub-lens group and a rear sub-lens group frame for supporting said rear sub-lens group(fig 13, 124), said front and rear sub-lens group frames being held in engagement with each other while being able to move in the optical axis direction relative to each other(fig 6 and col 7, lines 7-15); a lens frame shift mechanism(fig 6, 11, 12, 25 and col 7, line1 to col 8 line 25) for causing said front sub-lens group frame and said rear sub-lens group frame to move relative to each other to obtain said mutually close position and said mutually distant position(col 4, lines 1-37 and col 7, lines 5-16); a first lens group positioning surface(fig 2, 13 the extension

touching the back face of the lens), provided on said front sub-lens group frame, for positioning said front sub-lens group in the optical axis direction by contacting a portion of a rear surface of said front sub-lens group upon said front sub-lens group being inserted from the front side of said front sub-lens group frame; and a second lens group positioning surface(fig 10, 124, the portion touching the front of the lens surface), provided on said rear sub-lens group frame, for positioning said rear sub-lens group in the optical axis direction by contacting a portion of a front surface of said rear sub-lens group upon said rear sub-lens group being inserted from the rear side of said rear sub-lens group frame.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enomoto (U.S. Patent No. 6,456,442) in view of Tsuji et al.(U.S. Patent No. 5,870,232).

Regarding claim 1, Enomoto discloses a front sub-lens group(fig 1, 10), front and rear sub-lens groups functioning optically when in a mutually close position(fig 22) and in a mutually distant position(fig 22) with respect to the optical axes of said front and rear sub-lens group, the front and rear sub-lens group being held in engagement with

each other while being able to move in the optical axis direction relative to each other, front sub-lens group and said rear sub-lens group to move relative to each other to obtain said mutually close position and said mutually distant position(col 4, lines 19-65). Enomoto does not specifically disclose support lens frames with a positioning surfaces which touches the rear surface of the first lens group and the front surface of the second lens group with the front sub-lens group being inserted from the front side of said front sub-lens group frame and the rear sub-lens group being inserted from the rear side of said rear sub-lens group frame and a lens frame shift mechanism. However, Tsuji et al. discloses support lens frames with a positioning surfaces which touches the rear surface of the first lens group and the front surface of the second lens group with the front sub-lens group being inserted from the front side of said front sub-lens group frame and the rear sub-lens group being inserted from the rear side of said rear sub-lens group frame (fig 1, the third lens of the first lens group and lens 7) and a lens frame shift mechanism(fig 4 through 8). It would have been obvious, to one skilled in the art, to use the support frames and the shift mechanism, as described above and disclosed by Tsuji et al., in the lens system of Enomoto, since Enomoto does not specifically disclose the type of lens frames or shifting mechanism used and Tsuji et al. discloses support lens frames with a positioning surfaces which touches the rear surface of the first lens group and the front surface of the second lens group with the front sub-lens group being inserted from the front side of said front sub-lens group frame and the rear sub-lens group being inserted from the rear side of said rear sub-lens group frame and a lens

frame shift mechanism which are commonly used for supporting and shifting lens in a zoom lens system.

Regarding claim 7, Enomoto discloses the front(fig 22, 10) and rear sub lens(fig 22, 20) groups form one of a plurality of variable lens groups of a zoom lens system that are moved in the optical axis direction during zooming(fig 22), the front and rear sub lens groups serves as focusing lenses(col 4, 35-52). Enomoto does not specifically disclose a focusing mechanism. However, Tsuji et al. disclose a focusing mechanism(col 7, lines 1-65). It would have been obvious, to one skilled in the art, to use the focusing mechanism as disclosed by Tsuji et al., in the zoom lens system of Enomoto, since as shown by Tsuji et al. focusing mechanisms are commonly used in zoom lens systems for adjusting the lenses so as to focus the lens system.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsuta et al.(U.S. Patent No. 4,834,514) in view of Tsuji et al.(U.S. Patent No. 5,870,232).

Regarding claim 1, Atsuta et al. discloses a front sub-lens group(fig 2, L2) provided on the object side and a rear sub-lens group(fig 2, L4) provided on the image side, said front and rear sub-lens groups functioning optically when in a mutually close position(fig 6) and in a mutually distant position(fig 10) with respect to the optical axes of said front and rear sub-lens groups; a front sub-lens group frame(fig 2, 20) for supporting said front sub-lens group and a rear sub-lens group frame for supporting said rear sub-lens group(fig 2, 28), said front and rear sub-lens group frames being held in engagement with each other while being able to move in the optical axis direction relative to each other(fig 4 and col 8, lines 37-43); a lens frame shift mechanism(fig 1, 12, 13, 14 and col 6 lines 5-65) for causing said front sub-lens group frame and said rear sub-lens group frame to move relative to each other to obtain said mutually close position and said mutually distant position(fig 4 and col 8, lines 37-43); a first lens group positioning surface(fig 2, 20 the portion slanting inwards towards the optical axis), provided on said front sub-lens group frame, for positioning said front sub-lens group in the optical axis direction by contacting a portion of the front sub-lens group upon said front sub-lens group being inserted from the front side of said front sub-lens group frame; and a second lens group positioning surface(fig 2, 24, 20 the portion slanting inwards towards the optical axis), for positioning said rear sub-lens group in the optical axis direction by contacting a portion of the rear sub-lens group upon said rear sub-lens group being inserted from the rear side of said rear sub-lens group frame. Atsuta does not disclose the positioning surface extends around the side of the lens to contact either the front or back surface of the front and rear lens sub groups

respectively. However, Tsuji et al. discloses extending the positioning surface to extend around the side of the lens so as to contact either the front or back surface of the lens(fig 1, lens 7 and the third and fourth lenses in the first lens group). It would have been obvious to one skilled in the art at the time of the invention to form the positioning surface so as to contact the front or back of the lens surface as shown by Tsuji et al., in the lens device of Atsuta, since as shown by Tsuji et al., extending the positioning surface to extend around the side of the lens so as to contact either the front or back surface of the lens is commonly done so as to add additional stability to the lens being supported.

Regarding claim 2, a modified Atsuta et al., as detailed in claim rejection 1 above front sub-lens group frame includes a front sealed region in the front end portion thereof(fig 2, the part covering the lens L2 and attached to the frame 20), said front sealed region preventing said front sub-lens group from coming out from the front side of said front sub-lens group frame; and lens group frame includes a rear wherein said rear sub sealed region in the rear end portion thereof(fig 2, the part covering the lens , L4 and attached to the frame 28), said rear sealed region preventing said rear sub-lens group from coming out from the rear side of said front sub-lens group frame.

Regarding claim 3, Isasaki discloses a pair of follower engaging recesses(fig 1, 36) which are formed on one of opposing surfaces of said front sub-lens group frame and said rear sub-lens group frame; and a follower projection(fig 1, 34) which are formed on the other of said opposing surfaces of said front sub-lens group frame and said rear sub-lens group frame; wherein said mutually close position of said front sub-

lens group is defined via engagement of said follower projection and one of said pair of follower engaging recesses, and said mutually distant position of said front sub-lens group is defined via engagement of said follower projection and the other of said pair of follower engaging recesses(fig 4).

Regarding claim 4, a modified Atsuta et al., as detailed in claim rejection 1 above, discloses front sub-lens group frame and said rear sub-lens group frame can be rotated relative to each other and wherein said lens frame shift mechanism includes a shift cam mechanism provided on opposing surfaces of said front sub-lens group frame and said rear sub-lens group frame for moving said front and rear sub-lens group frames to said mutually distant position and to said mutually close position in accordance with the relative rotation of said front and rear sub-lens group frames(col 7, line 10 to col 8, line 43).

Regarding claim 5, a modified Atsuta et al., as detailed in claim rejection 1 above, discloses a shift cam surface(fig 11, 14 a1, 14 b1, 33a, 34a) provided on one of the opposing surfaces of said front sub-lens group frame and said rear sub-lens group frame, said shift cam surface being inclined with respect to a circumferential direction thereof(fig 11); and a follower projection(fig 11, 23, 17a, 17b) provided on the other of said opposing surfaces of said front sub-lens group frame and said rear sub-lens group frame for engaging with said shift cam surface.(fig 2)

Regarding claim 6, a modified Atsuta et al., as detailed in claim rejection 1 above, discloses a pair of follower engaging recesses are formed at opposite ends of each of said shift cam surfaces(fig 11, 12a, 12b, 33a, 32a), wherein said follower

Art Unit: 2873

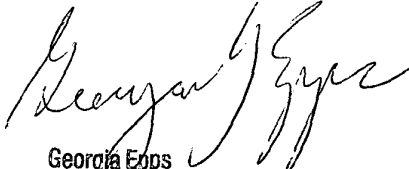
projection(fig 11, 12a, 12b, 17a, 17b), engages with one of said follower lens group engaging recesses when said front and rear sub frames are in said mutually close position and in said mutually distant position.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Thompson whose telephone number is (703) 305-0881. If the examiner can not be reached his supervisor, Georgia Epps, can be reached on (703) 308-4883.

T.J.T.

2/5/03


Georgia Epps
Supervisory Patent Examiner
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